Date Form Completed:	January 25, 2013

Region:	Region 10	City:	Klamath Falls	State:	Oregon
CERCLIS EPA ID:	ORN001002476		CERCLIS Site Name:	North Ridge Estates	
NPL Status: (P/F/D)	Final		Year Listed to NPL:	2011	

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The North Ridge Estates (NRE) site, Operable Unit #1, is located approximately 3 miles north of the City of Klamath Falls, in Klamath County, Oregon, on Old Fort Road and North Ridge Drive (Please see map of site in attachments 1 and 2).

The NRE site is named after the North Ridge Estates residential subdivision built on a portion of the property that is now included within the Site boundary. There are two Operable units at NRE. Operable Unit #1 (OU1) includes 125 acres surrounding the NRE residential housing development. OU1 is comprised of privately owned parcels and parcels managed by a court-appointed Receiver. Operable Unit #2 (OU2) is made up of approximately 46 acres of the nearby Kingsley Firing Range. OU2 is a Formerly Used Defense Site which will be undergoing a munitions investigation prior to EPA conducting the RI/FS. The focus of this Priority Panel review is OU1.

The contaminants of concern are asbestos and arsenic. The source of the asbestos found on the site is asbestos containing material (ACM) that was used in the original construction of a former Marine Recuperation Barracks (MRB). When the MRB buildings containing ACM were improperly demolished, some of the ACM debris was consolidated into waste piles or burial pits and the rest of the ACM was dispersed in surface and subsurface soil in the vicinity of the demolition. During development of the NRE residential housing area most of this ACM was covered or buried with soil, but some was left exposed. Over time pieces of ACM in the shallow subsurface soil have appeared at the surface. This is believed to be due to repeated cycles of frost heave, surface soil erosion, and/or transport by water runoff. Once at the surface the ACM can release asbestos fibers to surface soil and/or air, especially when the ACM and soil is disturbed by human or mechanical forces.

Arsenic contamination was detected in a small area around the location of the former MRB power plant. As coal was used as fuel at the power plant and is known to contain low levels of metals such as arsenic, the higher than background concentrations of arsenic in the soils at this location is likely a byproduct of coal combustion during the operation of the plant.

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General Project Information

Type of Action:	Remedial	Site Charging SSID:	10BT
Operable Unit:	01	CERCLIS Action RAT Code:	RA

Is this the final action for the site that will result in a site construction completion? This will be	☐ Yes	X No

the final action for OU1, but OU2 still needs to be investigated as explained above.		
Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control?	X Yes	☐ No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

Remedial and Removal actions taken:

From 2001 to 2011, 18 response actions have been performed by the PRP, Melvin Bercot Kenneth Partnership (MBK), and EPA, and were successful in removing and temporarily consolidating several hundred tons of ACM and asbestos-contaminated soil. The removal actions have reduced the volume of contaminated materials such as exposed ACM and asbestos-containing soil at OU1. Many of these were emergency removals to reduce the amount of friable asbestos at the soil surface. To date, there have been removals, stabilizations, and coverings of ACM/contaminated soil on at least 25 parcels on OU1; these removals have been successful at consolidating large amounts of ACM.

Unfortunately, no matter how many removal actions have been conducted at OU1, EPA has witnessed new ACM emerging through the soils each spring due to frost heave and erosion events.

Regulatory and Legal Actions Taken

Regulatory agencies became involved at OU1 in 1978 in response to complaints regarding visible asbestos-containing construction debris on the property. In September 1979, EPA cited MBK for causing asbestos releases that were the result of improper disposal of ACM. On July 29, 2001, the Oregon Department of Environmental Quality (DEQ) received a complaint about exposed asbestos pipe at a parcel on North Ridge Drive in the NRE development [CDM, 2008]. During this time, large amounts of friable asbestos (*i.e.*, easily crumbled asbestos-containing material; the fibers from friable asbestos are easily released into the air) were observed on the ground of OU1. Due to these conditions, DEQ issued a Notice of Noncompliance to MBK [DEQ, 2001]. In 2002, MBK was required to survey all properties in the NRE Site and remove exposed asbestos. In March 2003, ODEQ (and the Oregon Department of Human Services) determined that the friable asbestos not removed from the site in 2002 continued to pose a significant public health hazard. ODEQ requested a referral to EPA on April 14, 2003, for emergency removal and assessment. On May 20, 2003, MBK entered into an administrative order on consent with EPA. Consistent with the administrative order on consent, MBK conducted a time-critical removal action, streamlined risk assessment, and reimbursed EPA's costs to that point. A unilateral order became effective on April 4, 2005. A subsequent legal settlement relieved MBK of this obligation, and EPA became the lead agency for remaining work at the NRE site.

As a result of the ACM contamination, a group of subdivision homeowners sued the MBK partnership in 2003. In 2006, a subset of NRE homeowners, MBK, and the U.S. Government reached a legal settlement in the form of a consent decree. MBK agreed to compensate the homeowners to allow them to relocate to new permanent residences. The consent decree also provided for a Receiver to hold title to the property and search for a purchaser willing to implement final cleanup measures to be selected by EPA. Most of the settling homeowners have relocated, however several residents chose to continue living on OU1. Some remaining homeowners were not party to the settlement (see below).

Since 2006, EPA has identified more properties around the original NRE site that are contaminated with ACM. The owners on these properties were not given an opportunity to relocate, as EPA did not know that their properties

were contaminated at the time of the 2006 settlement.

The NRE Site was added to the National Priorities List as the State of Oregon's free pick on September 16, 2011.

Remaining Residents

The NRE OU1 site is now comprised of: 18 vacant homes and 9 undeveloped lots held by the NRE Receiver, 10 privately held occupied properties, 3 privately held undeveloped lots, an occupied five-unit apartment complex, and 10 occupied homes that are on Thicket Court (property that has buried steam pipe with asbestos wrap that will need to have ICs put in place to protect residents). At last count, 18 children under the age of 18 live in these residences.

The homes on Thicket Court were once part of the original MRB, and steam was transported to these homes from the original steam plant on OU1. Steam pipes wrapped in asbestos are deeply buried on each of these properties and have never been disturbed. EPA has confirmed that no asbestos has been released from the steam pipe on these properties since the pipe was installed in the 1940s. As long as the pipe remains intact and undisturbed, EPA does not expect that any asbestos will be released from the pipe wrap. ICs will be put in place for these properties to ensure that pipe is not disturbed, and O&M will be conducted on these properties to ensure that no new asbestos emerges on these properties, or any other properties near OU1 boundaries.

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

The area to be considered includes all the properties within the boundary of the NRE OU1.

The Remedial Action will include the following components:

- Excavation of no less than 2 feet and up to 4 feet of contaminated materials (primarily ACM and asbestos fibers in surface and subsurface soils, and arsenic within soils from the former power plant) on privately owned and receiver-managed parcels.
- Installation of a visible marker layer to denote deep burial ACM left in place, if any, on each parcel.
- Capping of remaining soils on the parcels with clean cover soils of sufficient thickness to break the soil-to-air exposure pathway associated with residual ACM or asbestos fibers left in the soils.
- Consolidation and placement of excavated contaminated material in one or more onsite ACM repositories.
- Capping of the onsite repositories with a barrier of clean cover soil of sufficient thickness to break the soil-to-air exposure pathway and keep contaminated materials from migrating to the surface through natural processes such as frost heave and erosion. Access controls (signs and fencing) will be used as necessary to protect the repositories.
- ICs will be applied to the entire site to prevent disruption of residual contamination within parcels and consolidated material in the onsite repositories.
- Maintenance with ongoing monitoring (inspections and sampling) will be conducted to provide assurance that capped areas are maintained and not damaged, exposure does not occur, and caps remain protective.

<u>Other potential costs</u>:

Current sampling data indicate that indoor air in OU1 residences does not pose a risk to human health. Therefore, EPA has no reason to remediate indoor living spaces at this time. However, the selected remedy includes a contingency for interior cleaning, if necessary. After excavation and capping are completed on each parcel, sampling will be conducted in indoor living spaces (residences). If sampling shows a cancer risk from asbestos fibers in indoor air of greater than 1E-04 in any home, EPA will invoke a post–ROD change (such as an explanation of significant differences), to reflect this determination, to indicate which living spaces will need to be cleaned, and to share information with the public about how indoor cleaning will be conducted.

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:
Additional work remaining includes completion of a RI/FS for NRE OU2 to determine the nature and extent of all contaminants on the NRE Site. Construction completion will be achieved after all residences within OU1 have been sampled to ensure indoor air is protective and a remedy has been implemented for NRE OU2.
Response Action Cost
Total Cost of Proposed Response Action: *($ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)*
NRE OU1 RA Construction Costs Optimal funding (Scenario A): $22,888,000 over three construction seasons (FY13 through FY15) 90% provided by EPA under SSC ($20,599,200) 10% provided by State of Oregon under SSC ($2,288,800)
Source of Proposed Response Action Cost Amount: *(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc…)*
90% RD
Breakout of Total Action Cost Planned Annual Need by Fiscal Year: *(If the estimated cost of the response action exceeds $10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)*
NRE OU1 RA Construction Costs

Exemption 5: DP

Other information or assumptions associated with cost estimates?
Total remedy cost is based on assumption that all residents will participate in the cleanup, and that cleanup will be conducted in a 3 year timeframe.
Readiness Criteria
1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?
EPA and the Oregon Department of Environmental Quality (ODEQ) expect to sign the SSC in March 2013.
2. If Non-Time Critical, is State cost sharing (provide details)?
Yes, the State intends to provide cost share. Currently, ODEQ is seeking agreement with other State agencies (Division of State Lands and Department of Transportation) to provide State land where we will obtain soils for needed backfill and cap on the NRE Site. The State 10% cost share will likely be significantly offset (or may be completely addressed) by credit to State for these soils.
3. If Remedial Action, when will Remedial Design be 95% complete?
June 2013
4. When will Region be able to obligate money to the site?
July 2013
5. Estimate when on-site construction activities will begin:
Late Summer 2013.
6. Has CERCLIS been updated to consistently reflect project cost/readiness information?
Yes.

Site/Project Name:	**North Ridge Estates Operable Unit #1**
Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)	
Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on	

current/future use, on-site/off-site, media, exposure route, and receptors:

The current and future land use for the 125 acre OU1 is expected to be residential.

Asbestos is the primary contaminant of concern at the North Ridge Estates site and inhalation exposure represents the pathway of greatest concern. Many of the residents have re-located offsite as part of a settlement; however, some residents remain. These remaining and potential future residents are the exposure population of interest.

Asbestos-containing material (ACM) and free asbestos in soil represent the principal threat waste. Current cancer risks from asbestos fibers range as high as 1E-03 at locations where residents can contact friable types of ACM. In the future risks could be even greater as ACM on the surface degrades and releases fibers to the soil where they can be inhaled upon disturbance by residents or as transported by windblown dust. Estimates of potential future risk to construction workers are expected to exceed EPA's risk range (i.e., 1E-06 to 1E-04).

In addition to asbestos, arsenic also is present at levels that exceed the state of 10-5 ARAR. (The arsenic concentrations in soil at the former power plant range between 0.5 mg/kg and 27.2 mg/kg. Using an exposure point concentration of 17 mg/kg, the excess lifetime cancer risk was determined to be 4E-05.)

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

MEDIUM	**<2yrs**	**<10yrs**	**>10yrs**
Soil	72	68	62

The numbers of people who are reasonably anticipated to be exposed in the absence of any future EPA action will probably remain pretty constant. People who live on OU1 have been unable to get refinancing for their homes, and are unable to sell their contaminated properties. Therefore, the only change expected for OU1 is when the number of school age children now residing on OU1 reach 18 years old, and older residents die.

At one property, the owner has died and the heir has been unable to sell the home due to the asbestos contamination. The home has not been claimed back by the bank. It is likely that upon the death of more NRE property owners, more homes will fall into disrepair the longer OU1 remains unaddressed.

Discuss the likelihood that the above exposures will occur:

The likelihood of the above exposures is high. OU1 contains a residential development with 20 occupied homes and one fully occupied 5-unit apartment building. Currently occupied residences are located within OU1 boundaries and have contamination in the soil. In some instances, the removal program has addressed surface contamination, but a complete remedy has not yet been implemented. Unoccupied residences would be reoccupied only after sufficient remediation is done on OU1.

Fencing has been installed around the on-site repositories and across some of the private drives, and warning signs have been posted around OU1. While these measures (fencing and signage) may reduce exposure to the contamination at OU1, they cannot be relied upon to keep people – especially children - from entering OU1. Fencing is pulled down and pried open during times EPA is not at the Site, and nearby residents are known to walk on and play around the asbestos contamination at OU1. (EPA has noted bicycle and motorcycle tracks, as well as small shoeprints in contaminated areas on OU1.) EPA has observed children riding their motorcycles on one of the contaminated parcels on OU1 (see photos in attachment 3) The two boys shown in the attached picture are riding their motorcycles in an area on the NRE Site, OU1, that was once a horse corral. This land is now one of the vacant properties on OU1, so it is nearly impossible to police access to this portion of OU1. The old horse corral is located very near to the boys' home and is a place they admit they often ride. The boys and their parents are aware that

very friable asbestos contamination - Mag and AirCell - is found on this property. Even if the boys did not ride on this portion of OU1, they would still be exposed to asbestos contamination on a daliy basis, as their family resides on one of the contaminated properties at NRE OU1.

Despite putting up signs, installing fencing across roads, and having conversations with property owners, nearby residents continue to access the contaminated areas on the site

Other Risk/Exposure Information?

The migration of ACM from subsurface soil to surface soil is a dynamic process. Despite surface pickup of ACM, pieces of ACM have continued to migrate upwards to the soil surface. EPA's removal program has been successful in obtaining funding to address some locations; however, a complete remedy for OU1 has not been achieved.

Site/Project Name:	**North Ridge Estates Operable Unit #1**

Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)

Describe the means/likelihood that contamination could impact other areas/media given current containment:

The likelihood that contamination could impact other areas/media is currently low to medium. Soil contaminant migration may occur when carried on shoes/bikes/vehicle tires, and also by erosion and wind. As more contamination comes to the soil surface (from frost heave or erosion) and degrades, more friable asbestos fibers may be released, and the likelihood that contamination could impact other areas will increase over time. As more asbestos fibers are released, there is a greater chance than indoor contamination of living spaces could occur, and contamination will be carried further outside the boundaries of the NRE OU1 Site.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

Most of the contaminated soil on the NRE site has no containment or engineered structures to prevent migration of contamination.

EPA has created 2 temporary repositories for on-site containment of soils excavated during our 2008 and 2011 Removal Actions at OU1. The 2008 Removal Action excavated 23,000 cubic yards of soils from highly contaminated areas within NRE OU1 and created on-site repository #1. Repository #1 has been temporarily capped with soils. The soil cap is expected to prevent migration of contaminants for several more years.

In 2011, EPA's Removal Program excavated an additional 17,000 cubic yards of contaminated soils and created on-on-site repository #2. Repository #2 will be temporarily capped this spring by EPA's removal program as the plastic cap installed during 2011 failed during a high wind storm in November 2012.

As defined in the NRE OU1 ROD, the homes on the NRE site are considered part of the permanent cap on OU1. The current condition of occupied homes is very good and likely to remain so (as long as homes are occupied). [Please see discussion about homes becoming vacant after owner's death in answer to Criteria #1, "Estimate of number of people reasonable anticipated to be exposed..."] The 18 currently vacant homes (and thus, part of permanent cap of the NRE OU1 Site) are being maintained to a bare minimum – to ensure that the homes remain structurally sound. EPA estimates that the homes will no longer be in livable condition in another 8 years – that is, after 2021.

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?

Asbestos contamination at OU1 is found in visible pieces and as asbestos fibers.

While visible pieces of ACM at the ground surface are too large to become airborne or be inhaled, weathering and/or mechanical breakdown can release free asbestos fibers from the pieces of ACM into the soil.

Transport or migration of asbestos fibers in soils is possible by either human caused soil disturbances (mowing, raking, weed whacking, walking over soils, motorcycle or bike riding, etc.), digging or burrowing animals, or by natural disturbances: frost heaving, surface soil erosion, or wind. Vegetative cover may help to stabilize the soils and reduce migration potential.

Arsenic contamination is found in soils on and near the former power plant and is co-located with asbestos-contaminated soils.

The physical condition of the contaminants is permanent. [The physical condition *is* reversible but would require **very** expensive and difficult treatment that was evaluated and screened out in the FS. Approximate cost for this alternative, a described in the NRE OU1 FS = $129,270,000.]

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

As explained above, EPA has created 2 temporary repositories for on-site containment of soils excavated during our 2008 and 2011 Removal Actions at OU1. The temporary soil cap on the on-site repository created in 2008 is composed of approximately 6 inches of soil and has been seeded. This cap is expected to contain asbestos contamination stored beneath it for the next few years. This is not a frost protective cap, and ACM and asbestos fibers are expected to re-emerge through the temporary cap after only a few years.

The on-site repository created in 2011 is capped with a temporary plastic layer. The plastic cap failed during a high wind storm in November 2012. This cap is not at all reliable and must be replaced.

No additional institutional physical controls have been installed on the site (except around 2 temporary repositories mentioned above). Installing fencing on contaminated privately owned properties would not prevent current resident's exposure to contamination at the site, as these homeowners live on contaminated land. Also, as mentioned earlier, fencing on vacant Receiver-held parcels is pulled down and pried open during times EPA is not at the Site, and nearby residents are known to walk on and play around the asbestos contamination at OU1.

Other information on site/contaminant stability?

None

Site/Project Name:	**North Ridge Estates Operable Unit #1**

Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)

(Concentration, toxicity, and volume or area contaminated above health based levels)

List Principle Contaminants (Please provide average and high concentrations.):

(Provide upper end concentration (e.g. 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g. standard deviation} or a central tendency values [e.g., average].)

Contaminant	*Media	**Concentrations

Asbestos	Soil	Risk levels from active soil disturbance are approximately 1E-03. ODEQ's ARAR and acceptable risk threshold for asbestos exposure is 1E-06. (Please see discussion in next section below.)
Arsenic	Soil	0.5 mg/kg and 27.2 mg/kg

*(*Media: AR – Air, SL – Soil, ST – Sediment, GW – Groundwater, SW – Surface Water)*

*(**Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)*

Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. *(Please include the clean up level of the contaminants discussed.)*

ASBESTOS:

Asbestos is classified by EPA has a known human carcinogen. The selected cleanup level for asbestos in soils at OU1 is the Oregon State Department of Environmental Quality standard of 1E-06 (State ARAR). The only way to ensure protectiveness and meet this State ARAR is to cap the entire 125 acre site, and eliminate the soil to air exposure pathway.

In areas where readily friable asbestos (e.g., MAG and/or AirCell) contamination have been found on OU1, risk levels from active soil disturbance are approximately 1E-03, which exceeds EPA's and ODEQ's acceptable range. At locations evaluated across OU1 that do not contain Mag and AirCell asbestos contamination, the risk levels under current site conditions – averaged across all types of disturbance scenarios - range from 1E-05 to 8E-05. These risk levels fall within EPA's acceptable excess cancer risk range of 1E-06 and 1E-04, but exceed ODEQ's acceptable risk threshold of 1E-06. Since asbestos contamination is spread liberally over all of OU1, and MAG and AirCell contamination has been mixed with all other contamination on OU1, EPA cannot take action to address only the MAG and AirCell at the Site. Therefore, all of OU1 will be cleaned to meet the State 1E-06 ARAR.

Asbestos and ACM at this site pose an exposure risk to human receptors through inhalation of asbestos fibers released during active soil disturbance activities. Current and potential future risks are unacceptable in areas where readily friable asbestos (MAG and/or AirCell) is present at the surface and future risks are likely to be unacceptable at any location where ACM is present and is allowed to undergo future breakdown to release free fibers to soil. Based on this, rather than establish a chemical-specific cleanup level, the NRE OU1 Record of Decision (ROD) concluded that remedial action is needed for all locations with known ACM contamination to address current and future risks from asbestos. The Remedial Action Objectives (RAOs) for asbestos contamination will be achieved through implementation of remedial measures in the selected remedy including excavation, consolidation, containment to the extent practicable in onsite repositories, capping, and ICs to break or eliminate the exposure pathways.

Arsenic

Arsenic is classified as a Class A carcinogen and systemic toxicant. Arsenic contamination is found in soils on and near the former power plant and is co-located with asbestos-contaminated soils. Arsenic risk levels in these soils are within EPA's acceptable risk range of 1E-06 to 1E-04, but exceed ODEQ's risk threshold of 1E-06. Cleanup of asbestos in soils on and near the former power plant location will require EPA to excavate deeper than where arsenic contamination of concern has been found. Therefore, the RAOs for arsenic contaminated soils near the former power plant will be achieved by excavation and placement in a capped onsite repository as part of the OU1 final remedy. The EPA will use the presence of asbestos and excavation of two feet of soils or greater, rather than an arsenic cleanup level as a guide for how much soil needs to be excavated.

The arsenic concentrations in soil at the former power plant range between 0.5 mg/kg and 27.2 mg/kg. Using an exposure point concentration of 17 mg/kg, the excess lifetime cancer risk was determined to be 4E-05. While no arsenic cleanup level is needed, EPA has calculated the arsenic concentration in soil that would equate to a human health risk level of 1E-06 using residential exposure assumptions as 0.425mg/kg.

Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. *(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)*

The soils at the NRE Site, OU1, have been spread and buried so liberally and widely that there is no way to distinguish where the very friable forms of asbestos were buried as opposed to those forms on OU1 that are still in large pieces, have not yet weathered, and are currently less friable. The result is that the soils on the entire 125 acre NRE OU1 with be excavated to remove the bulk of the asbestos, and then the entire site will be capped with no less than 2 feet of clean soil to ensure that the remedial action meets State ARARs. EPA expects to excavate 357,000 cubic yards of contaminated soils from OU1 before capping NRE OU1. (This estimated volume of excavated soils does not include the soils that have already been excavated by EPA's Removal Program).

Arsenic contamination is found in soils on and near the former power plant and is co-located with asbestos-contaminated soils. The arsenic contaminated area on OU1 measures approximately 250 feet by 325 feet (or 81,250 square feet). This arsenic contaminated area is not fenced.

Other information on contaminant characteristics?

None

Site/Project Name:	**North Ridge Estates Operable Unit #1**

Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3)

(Endangered species or their critical habitats, sensitive environmental areas.)

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

No ecological receptors are expected to experience significant, long-term risk from Site-related contaminants at OU1. If OU1 is left unremediated, ACM or asbestos fibers could migrate through the current on-site stormwater system to an unnamed stream flowing north from OU1.

Would natural recovery occur if no action was taken? ☐ Yes x No
If yes, estimate how long this would take.

No, natural recovery is not possible for asbestos and arsenic.

Other information on threat to significant environment?

Site/Project Name:	North Ridge Estates Operable Unit #1

Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4)

(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)

Describe the degree to which the community accepts the response action.

There is a high degree of community acceptance of the response action at OU1. Community members have consistently requested that EPA accelerate its cleanup of OU1, as their homes are located on contaminated property. In addition to living directly on top of soils that present ongoing health risk to residents (especially to children), current residents cannot get refinancing, cannot sell or rent their homes and cannot simply leave OU1 and get on with their lives. One property owner died last spring, and her home is now vacant. The bank would not take possession of the property, and the family of the deceased could not arrange to have the home sold, as local Realtors were not willing to attempt to sell contaminated properties and no one indicated an interest in buying a home on contaminated land. So the home and associated support structures are simply sitting on the land with no heat or maintenance. Without action at this site, it is likely that more homes will fall into this "no man's land" of unoccupied and (soon to be) unoccupiable homes.

As stated in Criteria #2 above, the homes on the NRE site are considered part of the permanent cap on OU1. The 18 now vacant homes held by the receivership continue to be a target for vandalism and vagrants. EPA has used limited funding to ensure that the homes do not fall prey to rodents, roofs are patched, and homes are heated to 55 degrees to limit mold growth to ensure that the homes remain structurally sound. EPA estimates that the homes will no longer be in livable condition after 2021 (8 more years). Vacant homes at OU1 are now prime candidate for reuse – if we address contamination quickly enough that the homes at OU1 do not fall into irreparable condition.

EPA anticipates that proceeds from the sale of these homes will be used, in part, to support the creation of a long term property management program or Homeowners Association that will ensure property owners comply with Institutional Controls, and deed restrictions, imposed on the NRE properties. Some other proceeds can be used to pay the Receiver's legal costs associated with crafting deed restrictions and covenants, re-platting properties where on-site repositories now reside, and ensuring long term maintenance and protection of caps on those on-site repositories. Remaining proceeds may be returned to EPA to pay for a portion of the cleanup costs for the NRE site.

Currently the NRE Receiver has **$22,201** in his accounts with no new funding expected until RA funds are available for site, and homes are sold. Property insurance and property taxes have not been paid on the Receiver held properties for over two years because of lack of funds. When Receiver was fully funded, costs to support the management, insurance and to pay taxes on the properties totaled approximately **$208,000 per** year. This budget did not take into account any extraordinary costs associated with the Receiver-held properties (repair of leaking roofs, damage to homes from vandalism, repair of frozen water lines, or any of the legal fees associated with creation of draft Easements and Equitable Servitudes for the OU1,)

Describe the degree to which the State accepts the response action.

The State used its one-time nomination (free pick) to add this site to the NPL; this site is a very high priority for ODEQ. The State concurred and fully supports the selected remedy for OU1, and is eager to get OU1 addressed as soon as possible.

Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc…

The ROD for NRE was built around the idea that OU1 would be brought back to residential use, and the homes within OU1 would be used as part of the permanent cap over the asbestos contamination at OU1.

The homes held by the Receiver at NRE are a valuable asset that is quickly depreciating due to heavy snow falls and extreme cold temperatures during winter months, rodents, vagrants, vandalism, and normal wear and tear on these homes. In 2005, the 18 homes held by the Receiver were appraised at $8,275,000. The most expensive home was valued at 895,000 and the least expensive at 315,000. This was most certainly NOT an Environmental Justice Site, as the previous owners were doctors, lawyers, and other well paid professionals from the Klamath Falls area.

The homes have now been empty for 7 years, and are now estimated to be worth no more than 50% of what they were in 2005. (We won't really know what the homes will sell for until we have cleaned up the soils, and test to see what the market will bear.) We do know that the longer the homes stay vacant, the greater the cost to any prospective homeowners to bring the homes back to livable conditions. Fortunately, we are still receiving inquiries about the homes and people have indicated an interest in buying the homes once OU1 is cleaned up. We do not have a concrete idea of what these prospective purchasers are really willing to pay for the homes (they may be looking to buy the homes for a fraction of what they are currently worth).

Klamath County is eager to get the subdivision back fully on the tax rolls. The current annual real estate tax rate is one-third what the homeowners paid prior to the devaluing due to contamination. Some property owners have refused to pay any taxes at all, as they have told the county that their land is worth nothing until their properties are cleaned up.